

- What is Chemistry and Matter?

Chemistry is the study of matter, its properties and its changes or transformations.

- ★ Matter is anything that has mass and takes up space.

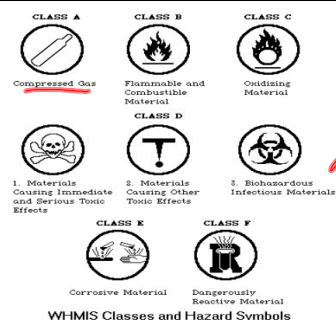
WHMIS

- Workplace Hazardous Materials Information System

- Why is it important?

① worker → YOU!
 ② Employer show a label
 ③ Manufacturer

WHMIS Symbols

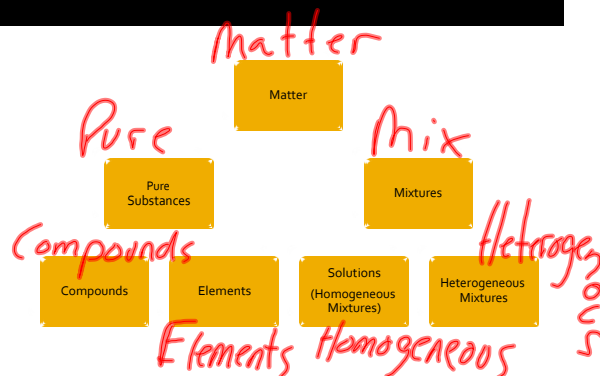


Test? Matching

Hazardous Household Product Symbols (HHPS)

- HHPS is used for products at home.
- WHMIS is used in the workplace.
- MSDS –Materials Safety Data Sheet
 -describes the hazards that are associated with the chemical (protective clothing, how to handle the chemical, how to clean up a spill).

Classification of Matter



- How do we know that a sample of matter is a pure substance?

A pure substance is made up of all the same particles. atoms

A pure substance also has constant properties. Example: pure water, aluminum foil.

Pure substances can be either elements or compounds.

NaCl *H₂O* of fixed ratios
of atoms
single atoms
Fe
H

Elements

- Elements are pure substances that cannot be broken down into simpler substances.

Elements contain only one kind of atom.

Example: Oxygen, hydrogen, iron, etc.
(anything on the periodic table)

Found on Periodic Table.
O₂ *H* *Fe*

What do you notice?

- What about:



Oxygen.
gen rule means that the
atoms are found naturally
in pairs.

Compounds

- Compounds are pure substances that contain two or more different elements in a fixed proportion.

Example: Water H_2O = 2 parts hydrogen to 1 part oxygen.

Salt $NaCl$ = 1 sodium to 1 chlorine
means 2 atoms
C₆H₁₂O₆ - glucose
6 Carbon 12 Hydrogen
6 Oxygen

Mixtures

- A mixture is a substance made by combining two or more different materials in such a way that no chemical reaction occurs.

Homogenous Mixture (Solution)

- Mixture where the two different substances that are combined together are mixed very well.
- Any portion of the sample has the same properties and composition.

Example: Salt Water
Milk



Heterogeneous Mixture

- Mixture where the different parts or each substance can be separated physically.
- Different parts are visible.

- Example: Toppings on a Pizza
Chocolate chip cookie
Salad



Test ?

- | | |
|-------------------------------|-----------------------------------|
| ■ Salt - <i>Pure Comp.</i> | ■ Apple Juice - <i>Mix homog.</i> |
| ■ Sugar - <i>Pure Comp.</i> | ■ Syrup - <i>Mix homog.</i> |
| ■ Wood - <i>Pure Comp.</i> | ■ Gold - <i>Pure elem.</i> |
| ★ Rock - <i>Pure Comp.</i> | ■ Air - <i>Mix homog.</i> |
| ■ Water - <i>Pure Comp.</i> | ■ Oxygen - <i>Pure Element</i> |
| ■ Milk - <i>Mix Homog.</i> | ■ Silver - <i>Pure Element</i> |
| ■ Plastic - <i>Pure Comp.</i> | ★ Cookies - <i>Mix - hetero</i> |
| ■ Glass - <i>Pure Comp.</i> | ★ Cake - <i>Mix - homog.</i> |
| ■ Mercury - <i>Pure Elem.</i> | ■ Sand - <i>Mix - hetero</i> |

Classify the following as:

a) pure or mixture

b) element, compound, heterogeneous or homogeneous

mixture

Mar 19-2:52 PM